WHAT IS CLAIMED IS:

1.   A method of forming a polygon image, comprising the steps of:

5   obtaining a plurality of polygons having normal line data as apex data and constituting a model;

sorting the model constituted by the plurality of polygons into polygons of a first color part and polygons of a second color part by boundary lines consisting of the

10   direction of a light source and normal lines-of the model;

pasting up a first mono-color texture on the sorted polygons having the first color part, and pasting up a second mono-color texture on the sorted polygons having the second color part; and

15   dividing the polygons intersecting the boundary lines along the boundary lines, pasting up the first mono-color texture on the polygons belonging to the first color part out of the divided polygons, and pasting up the second mono-color texture on the polygons belonging to the second color part.

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2.   The method of forming a polygon image according to claim 1, wherein

said sorting by the boundary lines into polygons of the first color portion and polygons of the second color part is

25   implemented by:

acquiring an inner product value of the normal line of the apexes of the respective polygons and the normal line of

the light source, from the direction of the light source and

the normal line of the model with respect to the plurality of

polygons, and then

sorting into polygons having the same polarity of the thus

5   acquired inner product at the respective apexes and polygons

having different polarities of the thus acquired inner product

at the respective apexes.

3.   The method of forming a polygon image according to claim

10   2, wherein

the intersectional position of the polygon intersecting

a boundary line is acquired from a proportional relation with

the inner product of each of two apexes of a boundary-line-

intersecting side of the polygon intersecting the boundary

15   lines when the inner product value at the intersectional

position is 0.

4.   An image processing apparatus comprising:

control means for obtaining a plurality of polygons

20   having normal line data as apex data and constituting a model,

the control means sorting the model constituted by the plurality

of polygons into polygons of a first color part and polygons

of a second color part by boundary lines consisting of the

direction of a light source and normal lines of the model;

25   a rendering processor for pasting up a first mono-color

texture on the thus sorted polygons having the first color part,

and pasting up a second mono-color texture on the thus sorted

polygons having the second color part, and

dividing the polygon intersecting the boundary lines along the boundary lines, pasting up the first mono-color texture on the polygon belonging to the first color part out of the thus divided polygons, and pasting up the second mono-color texture on the polygon belonging to the second color part.

5.   The image processing apparatus according to claim 4, wherein

said sorting by the boundary lines into polygons of the first color portion and polygons of the second color part in the control means is implemented by:

acquiring the inner product value of the normal lines of the apexes of the respective polygons and the normal line of the light source, and then sorting into polygons having the same polarity of the thus acquired inner product at the respective apexes and polygons having different polarities of the acquired inner product at the respective apexes.

6.   The image processing apparatus according to claim 5, wherein

the intersectional position of a side of the boundary-line-intersecting polygon and the boundary line is acquired from a proportional relation with the inner product of each of two apexes of the boundary-line-intersecting side of the polygon intersecting the boundary lines when the inner

product value at the intersectional position is 0.

7.   A record medium storing a program which is execution
controlled by control means in an image processing apparatus,
the program providing a control which comprises the steps of:
    obtaining a plurality of polygons having normal line data
as apex data and constituting a model,;
    sorting the model constituted by the plurality of
polygons into polygons of a first color part and polygons of
a second color part by boundary lines consisting of the
direction of a light source and normal lines of the model;
    pasting up a first mono-color texture on the sorted
polygons having the first color part, and pasting up a second
mono-color texture on the sorted polygons having the second
color part; and
    dividing the polygons intersecting the boundary lines
along the boundary lines, pasting up the first mono-color
texture on the polygons belonging to the first color part out
of the divided polygons, and pasting up the second mono-color
texture on the polygons belonging to the second color part.

8.   The record medium having stored therein the program
according to claim 7, wherein
    said sorting by the boundary lines into polygons of the
first color portion and polygons of the second color part is
implemented by:
    acquiring an inner product value of the normal line of

the apexes of the respective polygons and the normal line of the light source, from the direction of the light source and the normal line of the model with respect to the plurality of polygons, and then

5   sorting into polygons having the same polarity of the thus acquired inner product at the respective apexes and polygons having different polarities of the thus acquired inner product at the respective apexes.

10   9.   The record medium having stored therein the program according to claim 8, wherein

the intersectional position of the polygon intersecting a boundary line is acquired from a proportional relation with the inner product of each of two apexes of a boundary-line-

15   intersecting side of the polygon intersecting the boundary lines when the inner product value at the intersectional position is 0.